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COMPARISON OF A FOLLOW-ON ANALYSIS AND INITIAL FINDINGS OF A SURVEY OF THE PERCEIVED QUALITY OF LIFE OF AIR FORCE PEOPLE

William L. George, Captain, USAF
Dale D. Lewis, Captain, USAF

LSSR 25-79B

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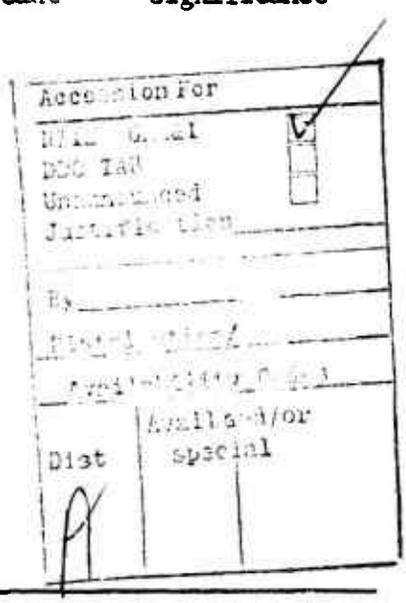

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This study examined the Quality of Life (QOL) of randomly selected samples of the military population at five Air Force installations: Mountain Home AFB, Keesler AFB, Griffiss AFB, Reese AFB, and Scott AFB. A survey instrument was developed for this purpose. The design of this study was to determine how different groupings of Air Force Military personnel, assigned to the five bases located within or adjacent to different Standard Metropolitan Statistical Areas (SMSA) perceived their QOL. As well, comparisons were made of these perceptions to the QOL ratings produced by a model developed by Dr. Ben-Chieh Liu of the Mid-West Research Institute. Statistical analysis involved the use of standard frequencies, condescriptive, and crosstabs computer analysis packages, K-sample median test, and Kendall coefficient of concordance W. The results of the study indicated that Dr. Liu's data may be dated given current responses and that further efforts to develop a QOL model may require the abandonment of Dr. Liu's QOL component guidelines.

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COMPARISON OF A FOLLOW-ON ANALYSIS AND INITIAL FINDINGS OF A SURVEY OF THE PERCEIVED QUALITY OF LIFE OF AIR FORCE PEOPLE

A Thesis

Presented to the Faculty of the School of Systems and Logistics

of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the Requirements for the

Degree of Master of Science in Logistics Management

By

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September 1979

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and

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	iii
LIST OF TABLES	vi
Chapter	
I. INTRODUCTION TO THE PROBLEM	1
Statement of the Problem	1
Definition of Terms	2
Research Objectives	3
Research Questions	4
II. LITERATURE REVIEW	5
Urban Studies	5
Measurement Schemes	7
III. RESEARCH DESIGN AND METHODOLOGY	13
Universe	13
Population	13
Sample	13
Data Collection Instrument	14
Statistical Tests	20
Level of Significance	26
Assumptions	27

Page

Chapter

Limitations 27

IV. ANALYSIS AND RESULTS OF THE QUALITY OF LIFE SURVEY 29

Survey Approval and Data Collection 29

Demographic Characteristics of the Respondents 29

Analysis of the Quality of Life Components 31

Base Inspection Questionnaire (BIQ) Comparison 38

Kendall Coefficient of Concordance, W, Analysis 49

K-Sample Median Test Analysis 49

V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS 53

Summary 53

Conclusions 56

Recommendations 56

APPENDIXES

A. QUESTIONNAIRE 59

B. COMPUTER PROGRAMS 74

C. DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS 83

D. SMSAs WITH ASSOCIATED LOW RATED COMPONENTS 87

E. QOL/BIQ ALIGNED QUESTIONS 89

SELECTED BIBLIOGRAPHY 92

LIST OF TABLES

Table		Page
1.	RATING SCALES	21
2.	MEAN VALUES AND THEIR DESCRIPTION--QOL SCALE	22
3.	RESPONSE DATA	30
4.	QOL OF SAMPLE POPULATION AT MOUNTAIN HOME AFB	32
5.	QOL OF SAMPLE POPULATION AT KEESLER AFB	33
6.	QOL OF SAMPLE POPULATION AT GRIFFISS AFB	35
7.	QOL OF SAMPLE POPULATION AT REESE AFB	36
8.	QOL OF SAMPLE POPULATION AT SCOTT AFB	37
9.	BIQ RACIAL ACCEPTANCE--POSSIBLE RESPONSES/VALUES	40
10.	BIQ COMPARISON QUESTIONS--POSSIBLE RESPONSES/VALUES	40
11.	MEAN BIQ/QOL RATINGS/RESPONSES FOR MOUNTAIN HOME AFB	41
12.	MEAN BIQ/QOL RATINGS/RESPONSES FOR KEESLER AFB	43
13.	MEAN BIQ/QOL RATINGS/RESPONSES FOR GRIFFISS AFB	44
14.	MEAN BIQ/QOL RATINGS/RESPONSES FOR REESE AFB	46

Table		Page
15.	MEAN BIQ/QOL RATINGS/RESPONSES FOR SCOTT AFB	48
16.	KENDALL COEFFICIENT OF CONCORDANCE, W, COMPUTATIONAL VALUES	50
17.	K-SAMPLE MEDIAN χ^2 STATISTICS	52
18.	PRIMARY DATA FILE REARRANGEMENT PROGRAM	75
19.	SECONDARY DATA FILE REARRANGEMENT PROGRAM	76
20.	TERTIARY DATA FILE REARRANGEMENT PROGRAM	77
21.	FREQUENCIES, CONDESCRIPTIVE AND CROSSTABS PROGRAM	78
22.	KENDALL COEFFICIENT OF CONCORDANCE PROGRAM	82
23.	K-SAMPLE MEDIAN TEST PROGRAM	82
24.	CHARACTERISTICS OF THE RESPONDENTS	84

CHAPTER I

INTRODUCTION TO THE PROBLEM

Statement of the Problem

The creation of Engineering and Services was designed to provide improved customer services and liveability to Air Force (AF) bases. This move is also indicative of the AF desire to better interface with the comprehensive planning of local communities (9:2). In the August, 1976, issue of Air Force Engineering and Services Quarterly, Major General Robert C. Thompson, then-Director of Engineering and Services, called on Engineering and Services management to devote more of their attention to the quality of their product with respect to liveability, aesthetics, and functionality (15:1).

Dr. Ben-Chieh Liu stated:

> In order to promote the general welfare, there is an urgent need in our transitional society to define the general welfare and to identify the factors that determine and influence our general welfare [17:2].

According to Headquarters Air Force/LEEX, Directorate of Engineering and Services, if Engineering and Services managers are to design efficient and effective programs to improve the quality of life (QOL) for AF people, they must have a reliable tool to measure the perceived QOL (8).

Currently, Engineering and Services has no such tool (11:2). However, a measurement instrument developed by Judkins and Webb (11) has been applied on a limited basis with successful results. This measurement instrument, a survey questionnaire, was developed to obtain perceived QOL information and was designed after Dr. Liu's model. Thus, there is a need to further assess the validity of the Judkins-Webb instrument as a tool for measuring the perceived quality of life.

Definition of Terms

Quality of Life. Each person has his or her own ideas about what makes up QOL. Because of the wide variety of factors that may make up QOL, it is difficult to define the term to everyone's satisfaction. Hornback and Shaw see it as:

> . . . a function of the objective conditions appropriate to a selected population and the subjective attitude toward those conditions held by persons in that population [17:11].

Dalkey and Rourke have defined QOL as:

> . . . a person's sense of well-being, his satisfaction or dissatisfaction with life, or happiness or unhappiness [17:11].

Dr. Ben-Chieh Liu has defined QOL as:

> . . . the output of a certain product function of two different but often interdependent input categories--physical inputs which are objectively measured and transferable, and the psychological inputs which are subjectively, ordinally differentiable but usually not interpersonally comparable [17:12].

Within this thesis, QOL is defined as:

> . . . a function of the objective conditions appropriate to a selected population and the subjective attitude toward those conditions held by persons in that population [11:3].

Standard Metropolitan Statistical Area. A Standard Metropolitan Statistical Area (SMSA) is an economic entity performing a variety of economic functions (production, distribution and consumption), and has a central city of at least 50,000 population. It normally contains several neighboring counties of related social, economic, political, and environmental characteristics (17:52).

> Geographically, the size of a metropolitan area is approximately transversable in much less than a day, i.e., a so-called commuting distance [17:52].

Research Objectives

The research objectives of this thesis were to:

1. Refine an existing instrument to measure the perceived QOL of AF military personnel.
2. Measure the perceived QOL of AF personnel who work at five bases which are located within or adjacent to SMSAs.
3. Compare the measured perceived QOL:
    a. Between the bases under study.
    b. With the QOL calculated by Dr. Ben-Chieh Liu's model for each SMSA under study.

c. With data obtained in the Air Force Base Inspection Questionnaire Program.

Research Questions

The research questions were:

1. What comparisons can be made between the sample's perceived QOL and the QOL calculated by Dr. Ben-Chieh Liu's model for each SMSA under study?

2. What comparisons can be made between the perceived QOL of each base under study?

CHAPTER II

LITERATURE REVIEW

This review transitions from the fields of urban studies intermingled with sociology to those studies conducted by AF members most directly dealing with AF QOL.

Urban Studies

It is within the area of urban studies that the economic and social characteristics of metropolitan areas are questioned. Persons prominent in urban studies may employ different terminology in discussions of perceptions of QOL, but the concept of the necessity for planning being related to human needs is a constant.

The first question of common importance is, in effect, how can planning provide for enough mixture among uses of facilities--enough diversity--throughout enough of the encompassed areas, to sustain the areas' own vitality? Jane Jacobs proposes that the areas:

> . . . and indeed as many of its internal parts as possible, must serve more than one functon; preferably more than two. These must insure the presence of people who go outdoors on different schedules and are in the place for different purposes, but who are able to use many facilities in common [10:150].

Engineering and Services' confrontation with maintaining a desired standard of QOL is similar in that its planning must also provide for AF personnel service on a multiplicity

of levels: man in the home environment, man in the recreational environment, and man in the everyday environment (8). It is similarly recognized, as Jacobs has specified, that the lackings in providing for peoples' needs, which may seem on the surface to be frivolous, are, in fact, a handicap.

> Here are plenty of people, and people moreover who want and value . . . diversity badly enough that it is difficult or sometimes impossible to keep them from scooting away elsewhere to get it [10:155].

As in a metropolitan area, these losses upon an installation badly undermine any possible supreme convenience (10:162).

A measurement of "primary uses" must be made and evaluated, and, finally, planned for. "Primary uses" are those entities which, in themselves, bring people to a specific place because they are anchorages (10:162). Because "leisure time has the greatest potential for personal enrichment [8]," it is definitely to be provided for when identifying "primary uses." However, any "primary use" is, by itself, ineffectual; a single "primary use" must be effectively combined with another (10:162). Fortunately, the AF population and the microcosm of an installation retains all of those characteristics which imply "effective" primary use mixtures:

1. The people using the streets at different times must actually use the same streets,

2. The people using the same streets at different times must include, among them, people who will use some of the same facilities, and,

3. The mixture of people on a street at one time of day must bear some reasonably proportionate relationship to people there at other times of the day (10:163-164).

Lawrence Haworth has further expounded on the social urban philosophies, providing additional insights into the nature of man at different planning levels. The individual's life is viewed by Haworth to be compartmentalized into the bleak routine of work and the opposing occupation with affairs to which intrinsic value is attributed (6:90).

> If certain social and psychological conditions are satisfied, the wealth and, by implication, the welfare of the whole . . . will be advanced as an automatic and inevitable pursuit by each member . . . of his own self interest [6:47].

These observations are related to the AF philosophy that the "off the job situation is important to the production of the mission [8]."

The need for instruments to measure the needs and conditions to be satisfied of a captured population, whether it be the civilian metropolis or the military indigents, is established.

Measurement Schemes

Models of social indicators developed in the past have included:

1. The traditional measures of overall national prosperity and social well-being, economic models,

2. The subjective psychological models which focus on the individual's perspective,

3. The environmental model, whose methodology for constructing the component indicators is similar to the above mcdels, but represents specific interests in the natural environment,

4. The coverage of a variety of elements by the sociological model ranging from individual behavior to institutional organization, and,

5. The primary dealings with some special subject within the political sciences of the political model centered on issues of effectiveness, efficiency, performance, and party evaluation (17:14,16,19,26,25). In spite of this impressive segregation of thought, there exists a need for a synthesized, fundamental framework which must focus on all elements (17:26).

In response to the need for information on social conditions relating to a variety of conditions beyond that provided by any separate model, the QOL indicator movement was spawned. A search for QOL indicators was then to be born in an attempt to obtain new information which would be useful to"evaluate the past, guide the action of the present, and plan for the future [17:3]." The movement began with President Hoover's Committee on Social Trends

in 1929, the objective of which was to identify those social factors having a bearing on public policy. After a considerable span of time, President Eisenhower's Commission on National Goals was established in 1960. To follow were President Kennedy's Social Science Advisory Committee of 1962, seeking the establishment of systematic collection of basic behavioral data, and the 1966 National Commission on Technology Automation and Economic Progress, which called for social accounting (17:7).

From this brief policy review, it is explicit that even the nation's "high priesthood" of decision-makers recognized that:

> . . . for many of the important topics on which social critics blithely pass judgments, and on wnich policies are made, there are no yardsticks by which to know if things are getting better or worse [17:3].

In brief, it is still essential to construct a mechanism which can distinguish better from worse.

Within the AF, the Air Force Management Improvement Group (AFMIG), established in March 1975, was a pioneer in addressing AF QOL perceptions. The AFMIG's 150 question survey instrument, the Quality of Air Force Life (QOAFL) survey, was distributed and analyzed under the AFMIG's charter to "make a good service better [18.2]." Both Captains Thomas N. Thompson and Roger M. Vrooman provide separate in-depth reviews and analyses of the results of the AFMIG survey as an examination of "the organization

and management of the Air Force as they relate or impact on the human resource [16:3; 18:2]." Of the four out of nine separate areas covered by the QOAFL indicators (i.e., economic standard, free time, personal growth, health) which may have significance in this effort, personal growth was found to be most important. The relevance of the AFMIG findings may, however, be questionable due to the nebulous nature of the questions and their inability to address specifics.

In early 1977, the Air Force Inspection and Safety Center (AFISC) implemented the Base Inspection Questionnaire (BIQ) Program. Through identification of potential problems and sources of dissatisfaction experienced by active duty AF personnel, the program sought to provide an insight into the feelings of AF people about various aspects of their daily AF life, within their unit or base.

Data were requested for the BIQ surveys of the respective organizations to permit specific analyses and statements of the findings. Subjective comparisons were made of these surveys and data, inclusive of this survey and its findings.

The search for QOL indicators which has borne the most fruit, tested herein, is that of Dr. Ben-Chieh Liu. Dr. Liu's awareness of the problem-at-hand is well reflected in his endeavor to assimilate:

> . . . QOL indicators represented by a host of statistics on socioeconomics, political and environmental conditions [which] may offer clues to human attitudes and behavior, and societal performance over time [17:38].

In light of this, Dr. Liu selected 123 QOL factors which meet the criteria of being:

> . . . sufficiently universal, commonly understood and resulting in realistic, efficient policy implementation, flexible enough to account for lifestyle input variations, open to verification and updative [17:54].

These factors were, in turn, categorized as follows:

1. The economic component measures the command over goods and services of the capability to satisfy the basic needs for a decent standard of living, as reflected in the community economic health and individual economic well-being.

2. The political component describes the functional operations and institutional factors of the democratic system, the professionalism and performance of the local governments and other individual components being the two vital factors.

3. The environmental component encompasses air, visual, solid waste and water pollution, noise, climatological, and recreational factors.

4. The health and educational component measures length of life, medical care availability and accessibility, achievement of a basic education level and the opportunity to pursue higher, better, continuing education.

5. The social component is the most important and significant component of Dr. Liu's study (17:55).

Judkins and Webb compared their index designed to measure people's perceived QOL, with Dr. Liu's model (5:42). While initial indicators showed close correlation, further application of a refined instrument to a wider diversity of bases was necessary.

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

Universe

The universe of interest consisted of all commissioned AF officers and enlisted personnel assigned to bases located within or adjacent to SMSAs.

Population

There were five populations under study. They consisted of all AF military members below the rank of Brigadier General assigned to one of the following: Mountain Home Air Force Base, Idaho; Keesler Air Force Base, Mississippi; Griffiss Air Force Base, New York; Reese Air Force Base, Texas; or Scott Air Force Base, Illinois. Each base was considered a separate population.

Sample

The sample was designed to consist of three hundred members randomly drawn from each of the five populations. The AF Manpower and Personnel Center at Randolph Air Force Base, Texas, generated the sample and provided address labels for each member of the sample.

Base Selection. Excluding AF Reserve and Air National Guard bases, there are ninety-one AF bases in the

CONUS (11:14). Unlike an SMSA, an AF base is not a completely separate entity, interacting with its surrounding community, relying upon it to provide a variety of functions (2:4). "There is, in effect, a social, economic, political, and environmental contract between the base and its nearby community [2:4.]" Five Air Force installations were selected based on their location within or adjacent to SMSAs. At least one installation was selected from each of the four Air Force Continental United States (CONUS) geographical areas. Dr. Ben-Chieh Liu's ratings of SMSAs were also considered. The five identified installations are representative of four of the five of Dr. Liu's ratings; unsatisfactory through excellent.

Data Collection Instrument

A questionnaire was distributed by mail to each member of the sample. A copy of the questionnaire is contained in Appendix A. This distribution method was employed because it provided the most representative sample at the most reasonable cost in terms of time and money. Strict confidence of the respondents' identities was maintained at all times. It was not possible to link an individual's response to the individual.

In addition to demographic data, the following five variables were measured by the instrument:

1. Economic component,

2. Political component,

3. Environmental component,

4. Health and education component, and

5. Social component.

These variables were chosen with a view to developing as broad and common as possible a concept of well-being. Psychological inputs were not included because they are not quantifiable. The five goal areas encompass command over private goods and services being produced and consumed, those public counterparts not provided at "market prices" nor consumed. The physical input factors selected in this study tend to possess the following characteristics:

> *They should be sufficiently universal so that the fundamental principles would generally be agreed upon by, and apply to, the majority of people in the metropolitan areas today; they should be of great present and potential interest to all levels of government as essential elements of well-being.
>
> *They should be commonly understood and have policy bearings which can be realistically and efficiently implemented.
>
> *They should be flexible enough to account for any lifestyle input variations over space and time, and easily adaptable to changes in social, economic, political, and environmental conditions in a dynamic society.
>
> *They should be open to verification according to recognized scientific approaches, and updative with new data so that intertemporal comparisons can be made over time [17:85-86].

Demographic Data. The data to be collected in this part of the instrument determined:

1. A respondent's base of assignment;

2. A respondent's rank;

3. Length of time a respondent has been on station;

4. Whether a respondent lived on base, owned off-base housing, or rented off-base housing;

5. A respondent's formal education level;

6. Whether or not a respondent lived within, or adjacent to, the city limits of Boise, Idaho; Biloxi/Gulfport, Mississippi; Rome/Utica, New York; Lubbock, Texas or St. Louis, Missouri.

7. A respondent's marital status; and

8. The number of dependents supported by a respondent.

Economic Component. The economic component questions were designed to measure the importance a respondent places on his personal economic well-being and the economic well-being of the SMSA to which his base has been assigned. The questions were also designed to measure a respondent's perception of the SMSA's economic well-being. The individual questions were derived from Dr. Liu's model and several questionnaires developed by the AF Management Improvement Group, and have been extracted from a research effort by Judkins and Webb.

Political Component. The political component questions were designed to measure the importance a respondent places on the various ways people who live and work

in a metropolitan area can influence the political climate of the area. The questions were also designed to measure a respondent's perception of how well the people who live in the SMSA to which his base has been assigned can influence the political climate of that metropolitan area. These questions were derived from Dr. Liu's model and extracted from the research effort by Judkins and Webb.

Environmental Component. The environmental component questions were designed to measure the importance a respondent places on the quality of the natural environment in which he lives. The questions were also designed to measure a respondent's perception of the quality of the natural environment surrounding the SMSA to which his base has been assigned. These questions were derived from Dr. Liu's model and extracted from the research effort by Judkins and Webb.

Health and Education Component. Health and Education component questions were designed to measure the importance a respondent places on those health and education services normally provided by a metropolitan area. The questions were also designed to measure the perceived quality of the formal health and education services provided by the SMSA to which a respondent's base has been assigned. These questions were derived from Dr. Liu's model and extracted from the research effort by Judkins and Webb.

Social Component. The social component questions were designed to measure the importance a respondent places on the following three central social issues as identified by Dr. Liu:

1. Individual concerns,
2. Individual equality,
3. Community living conditions.

The questions were also designed to measure a respondent's perception of the quality of these issues in the SMSA to which his base has been assigned.

Individual concerns include the individual's opportunity for self-support, the promoting of maximum development of individual capability, and a widening opportunity for individual choice (17:69). Community living conditions include housing, public transportation, utility services, crime rate, and cost of living (17:172). These questions were derived from the model developed by Dr. Liu and extracted from the research effort by Judkins and Webb.

Data Classification. The data collected in the administering of the questionnaire included both ordinal and nominal level information. The nominal level data consists of the demographic information in the first part of the questionnaire. The ordinal level data includes the responses to the remaining questions all of which have been placed on a five-point scale.

Questionnaire Development. The questionnaire developed by Judkins and Webb was evaluated by HQ USAF/PREVX; their thesis advisor, Lieutenant Colonel Patrick J. Sweeney; and the thesis reader, Lieutenant Colonel Dale R. McKemey. As a result of these evaluations, the researchers made several changes to the original questionnaire. These changes not only simplified the questionnaire but also increased its validity. The revised questionnaire was evaluated by HQ USAF/LEEX, and has been evaluated by this research team's thesis advisor, Lieutenant Colonel Ronald E. Knipfer.

Instrument Reliability. Reliability is an indication of the extent to which a measure contains variable error (8:280).

> Variable error is defined in terms of random fluctuations in performance which lead a person to get a different score from one testing session to another . . . [4:42].

The pilot study, using the unrevised survey instrument, was performed by Judkins and Webb with the two sample populations of Bergstrom Air Force Base, Texas, and Lowry Air Force Base, Colorado. It is expected that this research effort will validate the reliability of the present instrument for Engineering and Services' use.

Instrument Validity. According to Emory, "The . . . validity of a research design is its ability to

measure what it aims to measure [5:120]." Excluding the demographic questions, all of the questions in the questionnaire are based on the model developed by Dr. Ben-Chieh Liu in his study entitled, Quality of Life Indicator in U.S. Metropolitan Areas, 1970. The researchers thus believe there is a certain amount of face validity to the questionnaire. The evaluation of the instrument by HQ USAF/PREVX and the faculty members of the Graduate Education Division, School of Systems and Logistics, lent logical validity to the questionnaire. Judkins and Webb's findings indicated that the survey instrument is valid in that their findings paralleled those of Dr. Liu for those SMSAs.

Statistical Tests

The raw data were received from the respondents on standard mark-sense scanner answer sheets. The responses were read into a computer data file using the equipment available in the computer support section, School of Systems and Logistics. Descriptive statistics were generated from this file using the CONDESCRIPTIVE, FREQUENCIES, and CROSSTABS subprograms of the Statistical Package for the Social Sciences (SPSS) package, and the K-Sample Median Test, and Kendall's W Test executed on the Control Data Corporation (CDC) computer. Programs used by the researchers are contained in Appendix B.

Data Analysis. Excluding the demographic questions (questions 1 through 8) all of the questions were placed on a five-point Likert Scale. The sample means of the responses to each group of questions were used to determine how each population perceived each of its QOL components. The composite of these means reflects each population's perception of its overall QOL. Ranking of these perceptions of overall QOL was developed through the use of Liu's criteria. The assignment of the ratings (Table 1) was dependent upon the use of the sample mean. Table 2 depicts the verbal description assigned to each of the five intervals of the Likert Scale for those questions which measured QOL.

TABLE 1

RATING SCALES

Thesis Satisfaction Ratings	Thesis Importance Ratings	Dr. Liu Ratings
Substandard	Unimportant	Substandard
Adequate	Unimportant to Moderately Important	Adequate
Good	Moderately Important	Good
Excellent	Moderately to Very Important	Excellent
Outstanding	Very Important	Outstanding

TABLE 2

MEAN VALUES AND THEIR DESCRIPTION--QOL SCALE

Mean Value	Description
1. $A \geq 3.744$	Outstanding
2. $2.743 \leq B < 3.744$	Excellent
3. $2.685 \leq C < 2.743$	Good
4. $1.684 \leq D < 2.685$	Adequate
5. $E < 1.684$	Substandard

The sample mean, $\bar{X}$, is the cornerstone of the computation as follows:

> The quality of life in the SMSA's is rated as Outstanding (A), Excellent (B), Good (C), Adequate (D), and Substandard (E) in accordance with their component indexes. The rating system used here is somewhat arbitrary. It is assumed that SMSA's with an index value of one standard deviation (S) beyond the mean level ($\bar{X}$) should be rated Outstanding (A), and SMSA's with an index value of one standard deviation below the mean should be rated Substandard (E). The other three fall in between ($\bar{X}$+S) and are rated, respectively, Excellent ($\bar{X}$+.028S$\leq$B$\leq\bar{X}$+S), Good ($\bar{X}$-.028S<C<$\bar{X}$+.028S), and Adequate ($\bar{X}$-S<D<$\bar{X}$-.028S) [17:88].

Measures of statistical significance of ordinal data are technically restricted to that body of methods known as nonparametric methods (5:115). Statistical testing of nondemographic data (questions 9 through 85) were accomplished through the use of nonparametric tests.

The advantages of the use of nonparametric statistics that apply to this research effort are:

1. Probability statements obtained from most nonparametric statistics are exact probabilities regardless of the shape of the probability distribution.

2. Nonparametric methods are available to treat data which are simply classificatory, i.e., measured in nominal scale (parametric tests tend toward the F test, which requires at least interval data),

3. Nonparametric tests are available to treat data which are inherently in ranks as well as data whose seemingly numerical scores have strength of ranks [14:32-33].

Not using parametric tests is justified because:

1. It would be necessary to make assumptions about the population which might not hold true (e.g., normally distributed, of at least an interval scale and with the same variance) and would, therefore, have to rest on conjecture and hope,

2. It would be necessary to "add information" and thereby create distortions which might be as great and as damaging as those introduced by "throwing away information" which occurs when scores are converted to ranks [14:32].

Basic distribution information regarding the variables was captured through use of the subprogram CONDESCRIPTIVE. Specific statistics to be used for the subprogram were the mean, mode, range, minimum, and maximum (1:201). Histograms presenting a graphic display of the relative frequencies of demographic variables' distribution were obtained through the subprogram FREQUENCIES.

The subprogram CROSSTABS enabled the computation of n-way joint frequency distribution tables.

A crosstabulation is a joint frequency distribution of cases according to two or more classificatory variables. The display of the distribution of cases by their position on two or more variables is the chief component of contingency table analysis and is indeed the most commonly used analytic method in the social sciences [1:218].

Because the nondemographic data are of the ordinal scale and have only a rank meaning, the appropriate measure of central tendency is the median (5:115). In instances where the population shape is unknown, the best estimator is that which is most "robust." The sample median has been defined as being of a higher order of "robustness" than the sample mean (18:195). The sample median was, therefore, used in statistical analyses of responses. Comparison of the average responses, component and overall categories, between sample populations was accomplished through use of the K-Sample Median Test. This test provided information which permits determination of whether K independent groups (not necessarily of equal size) have been drawn from the same population or from populations with equal medians (14:179). The general statements of the hypotheses were:

H_0: The median of the K populations are equal.

H_1: The median of one population is different from that of the other (two-tailed test).

or

H_1: The median of one population is higher than the other (one-tailed test).

If the median test leads to rejection of the null hypothesis and it is desired to further inspect the samples to determine which population medians are different from each other, any subgroup of two or more populations may be analyzed using the median test, until the differences have been isolated [3:170].

The steps used in the K-Sample Median Test are (14:184):

1. Determine the common median of the scores in the K groups.
2. Assign pluses to all scores above that median and minuses to all scores below. Cast the resulting frequencies in a K×2 contingency table.
3. Using the data in that table, compute the value of χ^2, determining df=K-1.
4. Determine the significance of the observed value of χ^2. If the associated probability given for values as large as the observed value of χ^2 is equal to or smaller than α, reject H_0 in favor of H_1.

The formula for computing χ^2, as shown by Siegel (14:180), is:

$$\chi^2 = \sum_{i=1}^{r} \sum_{j=1}^{k} \frac{(O_{ij}-E_{ij})^2}{E_{ij}}$$

where:

O_{ij} = observed number of cases categorized in the ith row of jth column.

E_{ij} = number of cases expected under H_0 to be categorized in the ith row of jth column.

$\sum_{i=1}^{r} \sum_{j=1}^{k}$ = directs one to sum over all cells.

When K sets of rankings exist, determination of the association among them may be achieved by using the Kendall coefficient of concordance, W. Concordance reflects the extent to which large or small values of one variable are associated with large or small values of another variable (12:71). W expresses the degree of association among

K sets of rankings (14:229). The general form of the equation for calculating W, as shown by Siegel, is (14:234):

$$W = \frac{S}{\frac{1}{12}K^2(N^3-N)-K\Sigma T}$$
$$T$$

where:

S = the sum of squares of the observed deviations from the mean of R_i.

K = the number of sets of rankings.

N = number of objects ranked.

$$T = \frac{\Sigma(t^3-t)}{12}$$

t = the number of tied observations in a group.

ΣT = summation of T for all K rankings.
T

The calculated W reflects the amount of agreement in the perceptions of QOL in the rank ordering of SMSAs.

Level of Significance

> The level at which the researcher chooses to set α should be determined by his estimate of the importance or practical significance of his findings. . . . it is for heuristic reasons that significance levels are emphasized [14:8-9].

Because the procedure of adhering rigidly to an arbitrary level of significance has been rejected in contemporary statistical decision theory, the level of significance for statistical testing and data analysis under this reserach has been subjectively set (14:8). The relative importance attached to making Type I error has been seriously considered as well (13:304). Accordingly, an α level of .05 was used throughout.

Assumptions

The assumptions under which this research was conducted are as follows:

1. The selected samples were representative of each population under study.

2. The definitions and assumptions from supportive research are valid and reasonable.

3. The full cooperation of the selected sample resulted in the return of accurate and valid data.

4. The questionnaire was reliable.

Limitations

The limitations under which this research was conducted are as follows:

1. Since the survey subjects are to be guaranteed anonymity, there was no possibility of following up survey results by requesting specific individuals.

2. As the questionnaire was not administered in a monitored environment, there may have been some collaboration of responses.

CHAPTER IV

ANALYSIS AND RESULTS OF THE QUALITY OF LIFE SURVEY

Survey Approval and Data Collection

The Air Force Manpower and Personnel Center (AFMPC) at Randolph AFB, Texas, provided the researchers the names of 1,500 randomly selected military members, 300 for each of the five bases surveyed. A three-week period was allowed from the date of mailing until the cut-off date. The effective return rate was 45.3 percent for Mountain Home AFB, 37.3 percent for Keesler AFB, 42.7 percent for Griffiss AFB, 46.3 percent for Reese AFB, and 42.3 percent for Scott AFB. The overall return rate for all five bases was 42.8 percent, this data being depicted in Table 3.

Demographic Characteristics of the Respondents

The detailed demographic characteristics of the 642 respondents are contained in Appendix C. In general, the majority of the respondents (75.9 percent) were enlisted members who had been assigned to their bases for fewer than four years (78.3 percent), with 64.2 percent having had various levels of college educations. Forty-six percent of the respondents lived on-base, 27 percent owned off-base housing, and 27 percent rented off-base

TABLE 3

RESPONSE DATA

	MTN Home	Keesler	Griffiss	Reese	Scott	Total
No. of questionnaires distributed	300	300	300	300	300	1500
No. of responses received within time frame	136	112	128	139	127	642
No. of responses from each base	136	112	128	139	127	642
Effective response rate	45.3%	37.3%	42.7%	46.3%	42.3%	42.8%

housing. Forty-three percent of the respondents lived within the city limits of the standard metropolitan statistical area (SMSA) associated with their base and over 67 percent of the respondents had two or fewer dependents.

Analysis of the Quality of Life Components

Table 4 depicts the mean responses and the quality of life (QOL) ratings of all respondents at Mountain Home AFB, its SMSA being Boise, Idaho. These respondents perceived their QOL to be lower than the level calculated by Dr. Ben-Chieh Liu's model in the economic, political, health and education, and social components. The environmental component was perceived as excellent, as opposed to Dr. Liu's 1970 rating of substandard. The overall perceived QOL rating of adequate was two ratings lower than Dr. Liu's rating of excellent for the Boise SMSA.

Table 5 depicts the mean responses and the QOL ratings of all respondents at Keesler AFB, its SMSA being Biloxi-Gulfport, Louisiana. These respondents perceived their QOL to be higher than the level calculated by Dr. Liu's model in the economic, political, and environmental components, while maintaining the same ratings of excellent and adequate in the health and education, and social components, respectively. The overall perceived QOL rating of adequate was an improvement over

TABLE 4

QOL OF SAMPLE POPULATION AT MOUNTAIN HOME AFB

Component	Questionnaire Results		Dr. Liu's Rating (1970)
	Mean Response	Ratings	
Economic	2.274	Adequate	Excellent
Political	2.603	Adequate	Outstanding
Environmental	3.062	Excellent	Substandard
Health & Education	3.678	Adequate	Good
Social	2.152	Adequate	Excellent
Overall QOL	2.554	Adequate	Excellent

TABLE 5

QOL OF SAMPLE POPULATION AT KEESLER AFB

Component	Questionnaire Results: Mean Response	Questionnaire Results: Ratings	Dr. Liu's Rating (1970)
Economic	2.203	Adequate	Substandard
Political	2.433	Adequate	Substandard
Environmental	2.900	Excellent	Substandard
Health & Education	2.965	Excellent	Excellent
Social	2.386	Adequate	Adequate
Overall QOL	2.577	Adequate	Substandard

Dr. Liu's 1970 finding of a QOL rating of substandard for the Biloxi-Gulfport SMSA.

Table 6 depicts the mean responses and the QOL ratings of all respondents at Griffiss AFB, its SMSA being Rome-Utica, New York. These respondents perceived their QOL to be lower than the level calculated by Dr. Liu's model in the political, environmental, and social components. The health and education component experienced a rise from Dr. Liu's evaluation of good to the survey response of excellent, while the economic component remained unchanged with a rating of adequate. The overall perceived QOL rating of good was the same as that found by Dr. Liu in his 1970 study.

Table 7 depicts the mean responses and the QOL ratings of all respondents at Reese AFB, its SMSA being Lubbock, Texas. These respondents perceived their QOL to be higher than that calculated by Dr. Liu's model in the political, environmental, and social components. The economic component reflects a drop from Dr. Liu's rating of excellent to the current rating of adequate, while the health and education component remained the same at excellent. The overall perceived QOL rating of excellent by survey respondents as an improvement of one rating level from that of good assigned by Dr. Liu.

Table 8 depicts the mean responses and the QOL ratings of all respondents at Scott AFB, its SMSA being

TABLE 6

QOL OF SAMPLE POPULATION AT GRIFFISS AFB

Component	Questionnaire Results		Dr. Liu's Rating (1970)
	Mean Response	Ratings	
Economic	2.222	Adequate	Adequate
Political	2.599	Adequate	Outstanding
Environmental	2.078	Adequate	Good
Health & Education	3.210	Excellent	Good
Social	2.520	Adequate	Good
Overall QOL	2.726	Good	Good

TABLE 7

QOL OF SAMPLE POPULATION AT REESE AFB

Component	Questionnaire Results: Mean Response	Questionnaire Results: Ratings	Dr. Liu's Rating (1970)
Economic	2.580	Adequate	Excellent
Political	2.817	Excellent	Adequate
Environmental	2.512	Adequate	Substandard
Health & Education	3.620	Excellent	Excellent
Social	2.879	Excellent	Good
Overall QOL	2.881	Excellent	Good

TABLE 8

QOL OF SAMPLE POPULATION AT SCOTT AFB

Component	Questionnaire Results		Dr. Liu's Rating (1970)
	Mean Response	Ratings	
Economic	2.518	Adequate	Excellent
Political	2.741	Good	Good
Environmental	2.687	Good	Substandard
Health & Education	3.374	Excellent	Adequate
Social	2.841	Excellent	Substandard
Overall QOL	2.832	Excellent	Adequate

St. Louis, Missouri. These respondents perceived their QOL to be higher than the level calculated by Dr. Liu's model in the environmental, health and education, and social components. The economic component rating dropped two levels, from excellent in the 1970 study to an evaluation of adequate by survey respondents. The political component remained unchanged at good. The overall perceived QOL rating of excellent was an improvement over the rating of adequate assigned by Dr. Liu.

Base Inspection Questionnaire (BIQ) Comparison

Six questions were selected from the 1978 BIQ responses provided by the Air Force Inspector General's office at Norton AFB, California. The six questions were selected on the basis of their request for information closely aligned with that request in the researchers' survey instrument. These six questions dealt with acceptance by other racial groups, military medical care satisfaction for both the military sponsor and the sponsor's dependents, and satisfaction with the on-base library selection of books and magazines. As well, two questions, dealing with quantity and variety of commissary merchandise, and quality and quantity of base exchange merchandise, were combined to enable comparison with the researchers' survey question dealing with retail facility evaluation. Finally, a question dealing with outdoor recreation

facilities and programs was selected. It must be pointed out that these six questions, out of a total of 266 very specific questions, were the only ones felt to be close enough to be able to make any effective comparisons. The rating scale used for the BIQ questions extracted are depicted in Tables 9 and 10 to give a more clear picture of base members' responses.

Table 11 depicts the mean BIQ responses and the QOL ratings of all respondents at Mountain Home AFB. The BIQ response for racial acceptance indicates that base members felt their acceptance to be approximately the same as other racial groups, while QOL survey respondents felt racial equal opportunity to be excellent. Medical care evaluation among BIQ respondents reflected a moderate satisfaction with sponsor and dependent medical care, while QOL survey respondents rated medical care as adequate. Respondents to the BIQ questions dealing with commissary and base exchange satisfaction indicated that they were neither satisfied nor dissatisfied, while QOL respondents rated their SMSA retail outlets adequate. The BIQ respondents felt moderately satisfied with library materials availability, while QOL survey respondents rated libraries in the Boise, Idaho, SMSA as adequate. Outdoor recreation availability was rated at a low moderate satisfaction level by the BIQ respondents, in comparison with QOL survey response rating this area as adequate.

TABLE 9

BIQ RACIAL ACCEPTANCE--POSSIBLE RESPONSES/VALUES

Response	Value
Much less than others	1
Less than others	2
The same	3
More than others	4
Much more than others	5

TABLE 10

BIQ COMPARISON QUESTIONS--POSSIBLE RESPONSES/VALUES

Response	Value
Extremely dissatisfied	1
Moderately dissatisfied	2
Neither satisfied nor dissatisfied	3
Moderately satisfied	4
Extremely satisfied	5

TABLE 11

MEAN BIQ/QOL RATINGS/RESPONSES FOR MOUNTAIN HOME AFB

Question	Mean BIQ Rating/Response	Mean QOL Rating/Response
Racial Acceptance	3.09 Same	2.986 Excellent
Medical Care	3.57 Moderately Satisfied	2.63 Adequate
Commissary/BX (Retail Facilities)	3.13 Neither Satisfied nor Dissatisfied	2.669 Adequate
Library	3.76 Moderately Satisfied	2.286 Adequate
Outdoor Recreation	3.465 Moderately Satisfied	2.541 Adequate

Table 12 depicts the mean BIQ responses and the QOL ratings of all respondents at Keesler AFB. The BIQ response for racial acceptance indicates that respondents felt that they are accepted and treated the same as other racial groups on base. Likewise, treatment of racial minorities in the Biloxi-Gulfport SMSA was viewed as excellent by QOL respondents. Moderate satisfaction with on-base medical care of sponsors and dependents was expressed by BIQ respondents, comparing favorably with QOL respondents rating SMSA medical care as excellent. BIQ respondents to commissary and base exchange questions exhibited moderate satisfaction with quality, quantity, and variety of merchandise. Evaluation of retail facilities in the SMSA by QOL respondents showed retail outlets rated adequate. BIQ library and outdoor recreation evaluations showed a strong moderate satisfaction, while QOL survey responses for the two areas garnered excellent ratings.

Table 13 depicts the mean BIQ responses and the QOL ratings of all respondents at Griffiss AFB. The BIQ response for racial acceptance showed a state of being the same for racial groups on the base. This compares with the rating of excellent rendered by QOL respondents to their evaluation of racial equal opportunity in the Rome-Utica SMSA. Medical care for sponsors in the BIQ responses was rated as moderately satisfactory, while

TABLE 12

MEAN BIQ/QOL RATINGS/RESPONSES FOR KEESLER AFB

Question	Mean BIQ Rating/Response	Mean QOL Rating/Response
Racial Acceptance	3.01 Same	3.00 Excellent
Medical Care	3.72 Moderately Satisfied	3.046 Excellent
Commissary/BX (Retail Facilities)	3.58 Moderately Satisfied	2.164 Adequate
Library	4.05 Moderately Satisfied	2.874 Excellent
Outdoor Recreation	4.05 Moderately Satisfied	2.766 Excellent

TABLE 13

MEAN BIQ/QOL RATINGS/RESPONSES FOR GRIFFISS AFB

Question	Mean BIQ Rating/Response	Mean QOL Rating/Response
Racial Acceptance	2.98 Same	3.328 Excellent
Medical Care	3.16 Neither Satisfied nor Dissatisfied	3.008 Excellent
Commissary/BX (Retail Facilities)	3.38 Neither Satisfied nor Dissatisfied	2.839 Excellent
Library	3.89 Moderately Satisfied	2.929 Excellent
Outdoor Recreation	3.67 Moderately Satisfied	2.865 Excellent

dependent medical care received a rating of neither satisfactory nor unsatisfactory. Respondents to the QOL survey, on the other hand, rated SMSA medical care as excellent. Retail outlets on the base received a moderately satisfied rating from BIQ respondents, compared to a QOL response evaluating SMSA retail facilities as excellent. On-base libraries were seen as being moderately satisfactory, while SMSA libraries were rated by QOL respondents as excellent. The QOL respondents viewed outdoor recreation as excellent, while BIQ respondents felt only moderately satisfied with on-base facilities.

Table 14 depicts the mean BIQ responses and the QOL ratings of all respondents at Reese AFB. The BIQ response for racial acceptance indicated that respondents felt that they are accepted and treated the same as other racial groups on base, while treatment of racial groups in the Lubbock SMSA was viewed as adequate by QOL respondents. Medical care for sponsors in the BIQ responses was rated as moderately satisfactory, while dependent medical care received a rating of neither satisfactory nor unsatisfactory, leaning toward a moderate dissatisfaction. Respondents to the QOL survey rated SMSA medical care as excellent. Commissary and base exchange responses for the BIQ rated this area as neither satisfactory nor unsatisfactory, while retail facility responses for the QOL survey rated that element adequate. Libraries on the base

TABLE 14

MEAN BIQ/QOL RATINGS/RESPONSES FOR REESE AFB

Question	Mean BIQ Rating/Response	Mean QOL Rating/Response
Racial Acceptance	2.97 Same	2.288 Adequate
Medical Care	3.14 Neither Satisfied nor Dissatisfied	3.619 Excellent
Commissary/BX (Retail Facilities)	2.90 Neither Satisfied nor Dissatisfied	2.664 Adequate
Library	3.62 Moderately Satisfied	3.358 Excellent
Outdoor Recreation	3.35 Neither Satisfied nor Dissatisfied	3.132 Excellent

were moderately satisfactory to BIQ respondents, while those responding to the QOL survey rated SMSA libraries as excellent. Outdoor recreation in the Lubbock SMSA was found to be neither satisfactory not unsatisfactory by BIQ respondents. Those responding to the QOL survey, however, felt outdoor recreation availability to be excellent.

Table 15 depicts the mean BIQ responses and the QOL ratings of all respondents at Scott AFB. The BIQ response for racial acceptance indicated that respondents felt that they are accepted and treated the same as other racial groups on base, while treatment of racial groups in the St. Louis SMSA was viewed as excellent by QOL respondents. Medical care in the SMSA was rated as moderately satisfactory by BIQ respondents and was evaluated as excellent by QOL survey respondents. On-base commissary and base exchange facilities were rated as neither satisfactory nor unsatisfactory by BIQ respondents, while QOL respondents rate SMSA retail facilities as adequate. On-base libraries were rated as moderately satisfactory by BIQ respondents, while QOL findings reflected that respondents rated SMSA libraries as excellent. The QOL respondents viewed outdoor recreation as excellent, while BIQ respondents were moderately satisfied with the availability of on-base recreation facilities.

TABLE 15

MEAN BIQ/QOL RATINGS/RESPONSES FOR SCOTT AFB

Question	Mean BIQ Rating/Response	Mean QOL Rating/Response
Racial Acceptance	3.18 Same	2.906 Excellent
Medical Care	3.85 Moderately Satisfied	3.252 Excellent
Commissary/BX (Retail Facilities)	3.03 Neither Satisfied nor Dissatisfied	2.421 Adequate
Library	4.05 Moderately Satisfied	3.262 Excellent
Outdoor Recreation	3.88 Moderately Satisfied	2.881 Excellent

Kendall Coefficient of Concordance, W, Analysis

The Kendall coefficient of concordance, W, was computed to ascertain whether or not the five AF bases surveyed were in agreement on at least three variables. Five questions were selected from the nondemographic area, one from each of the component areas of the questionnaire. The five questions dealt with respondent evaluations in the housing, metropolitan police protection, recreation facilities, community medical care, and bank, retail, and service facility areas. All 642 responses were used to insure that the W statistic obtained was a valid statement of the agreement, or disagreemnt, between bases. Table 16 depicts the mean values for each of the sample questions, used tc compute the W statistic.

The W statistic derived through the Kendall computation was found to be .864. It is clear, therefore, that the derived statistic, significant in its power, points out that the respondents at each of the five bases are applying essentially the same standard in ranking the five variable questions selected.

K-Sample Median Test Analysis

The K-Sample Median Test was used to determine whether or not the medians of the five populations surveyed were equal. Five questions were selected from the

TABLE 16

KENDALL COEFFICIENT OF CONCORDANCE, W, COMPUTATIONAL VALUES

Questions	Base Mean Value				
	Mountain Home AFB	Keesler AFB	Griffiss AFB	Reese AFB	Scott AFB
19	2.471	2.527	2.32 8	2.727	2.646
35	2.882	2.378	2.805	2.986	2.849
48	2.978	3.000	3.328	2.288	2.906
62	2.632	3.046	3.008	3.619	3.252
82	2.286	2.874	2.929	3.358	3.262

nondemographic area, one from each of the component areas of the questionnaire. The five questions dealt with respondent evaluations in the housing, metropolitan police protection, recreation facilities, community medical care, and bank, retail, and service facility areas. Due to the volume of individual responses that would be required to be manually input to calculate the K-Sample Median statistic, a random sample of 30 responses was selected for each question from each base surveyed. This action lends validity to the derived statistic through satisfaction of the Central Limit Theorem.

The resultant chi-square (χ^2) statistics for each of the variables measured are depicted in Table 17. The critical χ^2 statistic is computed with the previosly specified alpha (α) of .05, which is divided by two. The number of degrees of freedom is four, one less than the sample number of five. The resultant critical χ^2 statistic was determined to be 11.14. Comparison with χ^2 statistics for each variable shows that no χ^2 value is larger than that of the χ^2 critical value. It may be stated, therefore, that, within the randomly sampled questions, the medians are equal for the five populations surveyed. This is to say that there are no discernible differences in the central tendency of the five populations based on the sample questions.

TABLE 17

K-SAMPLE MEDIAN χ^2 STATISTICS

Question	χ^2 Statistic	χ^2 Critical Statistic
19	4.200	11.14
35	9.130	11.14
48	5.040	11.14
62	10.119	11.14
82	10.989	11.14

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study was designed to determine how different groups of AF military personnel who were assigned to five bases which were located within or adjacent to five different standard metropolitan statistical areas perceived their quality of life (QOL). Also, these perceptions were to be compared to the ratings produced by a model developed by Dr. Ben-Chieh Liu of the Mid-West Research Institute. This study measured the QOL of the five different metropolitan areas by determining how the 642 respondents to a survey questionnaire rated each of the following five components which have been held to comprise a metropolitan areas QOL:

1. The economic component,
2. The political component,
3. The environmental component,
4. The health and education component,
5. The social component.

The researchers revised the data gathering instrument developed by Judkins and Webb as part of this thesis effort: and used the CONDESCRIPTIVE and CROSSTABS subprograms contained in the Statistical Package for the

Social Sciences computer program library to analyze the data. The researchers were able to determine how the five different populations within the sample perceived each of the five components of a metropolitan area's quality of life and make comparisons among the populations. The researchers were also able to compare the samples' perceived QOL to the QOL calculated by Dr. Ben-Chieh Liu.

Within each of the sample populations surveyed, certain component areas of SMSA life were perceived to be at the lower end of the QOL ratings for that particular SMSA. These SMSAs, and their associated low-rated QOL component areas, are depicted in Appendix D. In Summary, the Boise, Idaho, SMSA received four ratings of adequate and one of excellent for its components. The economic, political, health and education, and social components all received ratings of adequate while the environmental component was perceived as being excellent.

The Biloxi-Gulfport, Louisiana, SMSA, serving respondents at Keesler AFB, received three ratings of adequate and two ratings of excellent. Those components receiving ratings of adequate were economic, political, and social, while those perceived to be excellent were in the environmental, and health and education areas. The Rome-Utica, New York, SMSA respondents rated four of their component areas as adequate, while rating only one as excellent. Those rated adequate were in the economic,

political, environmental, and social areas. The one excellent rating was garnered by the health and education component.

Reese AFB, Texas, respondents rating the Lubbock SMSA evaluated the economic and environmental components as adequate and all others as excellent. The St. Louis, Missouri, SMSA respondents rated their economic component as adequate, the political and environmental components as good, and the health and education, and social components as excellent.

The comparison between the AF Base Inspection Questionnaire (BIQ) and QOL survey data was accomplished through the use of ten BIQ questions compared with five QOL questions. In four instances, two BIQ questions were combined to make one question. The BIQ questions and the QOL questions with which they were compared are depicted in Appendix E.

The BIQ and QOL comparisons performed were deemed to be of little value in the final analysis. In effect, effort was expended comparing two different environments; that of the military installation, the facilities and liveability on which control might be exerted to a large degree by base programs initiated by the military hierarchy, and the SMSA, over which the base population has little or no control.

Conclusions

The lack of a parallel between Dr. Liu's ratings and those derived from this research effort casts doubt on the currency of Dr. Liu's SMSA data. It must be remembered that Dr. Liu's studies took place over ten years ago, being published in 1970. An updated effort might well arrive at the same findings achieved by this effort. This would seem to be very possible given the resultant statistics derived from the Kendall coefficient of concordance, W, and the K-Sample Median Test chi-square figures. These two tests, in particular, show that the concordance, or agreement, in responses from the five base populations, at .864, is indicative of a like-minded sample. The median test further bears this out in that all derived chi-square values were below the critical chi-square value.

Based on the results achieved in this research, the researchers recommend that Dr. Liu's model not be used by AF Engineering and Services as an indicator of those areas where the AF should concentrate its current efforts to improve the QOL of those bases which are located either within or adjacent to an SMSA.

Recommendations

The researchers feel that these findings further amplify the requirement for an effective model to measure

QOL. In any future attempts to develop such a model, particularly for military populations, we recommend that the developers not be restricted by the necessity to include all components used by Dr. Liu in his evaluations of metropolitan area QOL. Many of the questions within some components simply do not contribute significantly to the areas of interest to AF Engineering and Services.

As well, for any future attempts to analyze the QOL at an installation, we recommend that the questionnaire developed incorporate selective compatible questions from the BIQ. It should be recognized that, as AF Engineering and Services is interested in on-base liveability, the BIQ contains a wealth of data evaluating the myriad of facets of base facilities and base living. The QOL model incorporating the BIQ results will then be able to provide a greater appreciation of areas requiring attention. The BIQ data may be acquired under the Base Composite Report from:

Headquarters Air Force Inspection and
Safety Center/IGX
Norton Air Force Base
California 92409.

APPENDIXES

APPENDIX A

QUESTIONNAIRE

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (ATC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

REPLY TO ATTN OF: LSGR (LSSR 25-79B)/Capt W George/Capt D Lewis/AUTOVON 78-56513

23 May 79

SUBJECT: Quality of Life Perception Questionnaire

TO

1. The attached questionnaire was prepared by a research team at the Air Force Institute of Technology, Wright-Patterson AFB, Ohio. The purpose of the questionnaire is to assess how Air Force people perceive several factors which, in theory, contribute to the quality of life in a metropolitan area surrounding, or near to, an Air Force installation.

2. You are requested to provide an answer or comment for each question. Headquarters USAF Survey Control Number 79-97 has been assigned to this questionnaire. Your participation in this research is voluntary.

3. Your responses to the questions will be held confidential. Please remove this cover sheet before returning the completed questionnaire. Your cooperation in providing this data will be appreciated and will be very beneficial in examining the urban quality of life. Please return the completed questionnaire in the attached envelope within one week after receipt.

Donald R Edwards

DONALD R. EDWARDS, Lieutenant Colonel, USAF
Associate Dean for Graduate Education
School of Systems and Logistics

2 Atch
1. Questionnaire
2. Return Envelope

PURPOSE OF THIS SURVEY

This questionnaire is part of a research study of metropolitan life and people's perceptions of several factors which contribute to life in a metropolitan area. The research is being conducted by Captains William L. George and Dale D. Lewis of the Air Force Institute of Technology's Graduate School of Systems and Logistics. The purpose of the research is to assess how Air Force people perceive several factors which, in theory, contribute to the quality of life in a metropolitan area surrounding, or near to, an installation.

SCN 79-97 expires 30 September 1979

PRIVACY STATEMENT

In accordance with paragraph 30, AFR 12-35, the following information is provided as required by the Privacy Act of 1974:

a. Authority:

(1) 5 U.S.C. 301, Departmental Regulations, and/or

(2) 10 U.S.C. 8012, Secretary of the Air Force, Powers, Duties, Delegation by Compensation; and/or

(3) DOD Instruction 1100.13, 17 Apr 68, Surveys of Department of Defense Personnel; and/or

(4) AFR 30-23, 22 Sep 76, Air Force Personnel Survey Program.

b. Principal purposes. The survey is being conducted to collect information for use in research aimed at illuminating and providing inputs to the solution of problems of interest to the Air Force and/or DOD.

c. Routine uses. The survey data will be converted to information for use in research of management related problems. Results of the research, based on the data provided, will be included in written master's theses and may also be included in published articles, reports, or texts. Distribution of the results of the research, based on the survey data, whether in written form or presented orally, will be unlimited.

d. Participation in this survey is entirely voluntary.

e. No adverse action of any kind may be taken against any individual who elects not to participate in any or all of this survey.

1. What is your current base of assignment?

(a) Mountain Home AFB, Idaho
(b) Keesler AFB, Mississippi
(c) Griffiss AFB, New York
(d) Reese AFB, Texas
(e) Scott AFB, Illinois

2. What is your present active duty grade?

(a) Colonel
(b) Lieutenant Colonel
(c) Major
(d) Captain
(e) First Lieutenant
(f) Second Lieutenant
(g) Chief Master Sergeant
(h) Senior Master Sergeant
(i) Master Sergeant
(j) Technical Sergeant
(k) Staff Sergeant
(l) Sergeant
(m) Senior Airman
(n) Airman First Class
(o) Airman
(p) Airman Basic

3. How long have you worked at your current base?

(a) Less than 1 year
(b) 1 year but less than 3
(c) 3 years but less than 4
(d) 4 years but less than 5
(e) 5 years but less than 6
(f) 6 years but less than 7
(g) 7 years but less than 8
(h) 8 years but less than 9
(i) 9 years but less than 10
(j) 10 years or more

4. Do you live on or off base?

(a) On base
(b) Own off-base housing
(c) Rent off-base housing

5. What is your highest level of education now?

(a) Grammar school
(b) High School (did not graduate)
(c) High School graduate
(d) Trade or Technical School (no college)
(e) Some college (no degree)
(f) College degree (BS, BA or equivalent except LL.B)
(g) Registered nurse diploma program
(h) Master's degree
(i) Doctorate degree (includes LL.B, J.D., D.D.S., M.D., and D.V.M.)

6. Do you live within the city limits of any of the following cities?

- Boise, Idaho
- Biloxi/Gulfport, Mississippi
- Rome/Utica, New York
- Lubbock, Texas
- St. Louis, Missiouri

(a) Yes
(b) No

7. What is your marital status?

(a) Married and spouse is not a member of a military service
(b) Married and spouse is a member of a military service
(c) Never been married
(d) Divorced and not remarried
(e) Legally separated
(f) Widow/widower

8. How many dependents do you have? Do not include yourself.

(a) None
(b) One
(c) Two
(d) Three
(e) Four
(f) Five
(g) Six
(h) Seven
(i) Eight or more

BLOCK I-A

A	B	C	D	E
Unimportant		Moderately Important		Very Important

The five-point scale above indicates various degrees of importance. From the scale, please select the letter which best represents the amount of important you place on each of the following:

9. Your personal income level.
10. Building a large savings or investment account.
11. Owning your own home.
12. Owning your own car.
13. Owning more than one car.
14. The economic health of the metropolitan area around your base.

BLOCK I-B

A	B	C	D	E
Substandard	Adequate	Good	Excellent	Outstanding

The five-point scale above indicates your possible evaluation of each of the following questions. From the scale, please select the letter which best describes each of the following.

15. Your personal income level.
16. The size of your savings or investment account.
17. Your personal transportation.
18. The economic health of the metropolitan area around your base.
19. Your housing.

BLOCK II-A

A	B	C	D	E
Unimportant		Moderately Important		Very Important

The five-point scale above indicates various degrees of importance. Regardless of whether you live on or off base, please select the letter which best describes the amount of importance you place on each of the following:

20. Newspapers as a source of political information.

21. Television as a source of political information.

22. Radio as a source of political information.

23. Community participation in national politics.

24. Community participation in local (city and county) politics.

25. Your personal participation in local politics.

26. Local police protection.

27. Local fire protection.

28. A local welfare (city and county) program.

BLOCK II-B

A	B	C	D	E
Substandard	Adequate	Good	Excellent	Outstanding

The five-point scale above indicates your possible evaluation of each of the following questions. Regardless of whether you live on or off base, please select the letter which best describes each of the following:

29. Your metropolitan newspapers as a source of political information.

30. Your metropolitan television stations as a source of political information.

31. Your metropolitan radio stations as a source of political information.

32. Community (city and county) participation in national politics.

33. Community (city and county) participation in local area politics.

34. Opportunities for personal participation in local politics.

35. Metropolitan police protection.

36. Metropolitan fire protection.

37. Metropolitan (city and county) welfare programs.

BLOCK III-A

A	B	C	D	E
Unimportant		Moderately Important		Very Important

The five-point scale above indicates various degrees of importance. From the scale, please select the letter which best represents the amount of importance you would place on each of the following when selecting a place to live or retire:

38. The amount of air pollution in the metropolitan area.

39. The amount of water pollution (rivers and lakes) in the metropolitan area.

40. The scenic beauty of the metropolitan area.

41. The amount of noise pollution in the metropolitan area.

42. The availability of recreational facilities (parks, trails, tennis courts, etc.).

43. The climate or general weather conditions in the metropolitan area.

BLOCK III-B

A	B	C	D	E
Substandard	Adequate	Good	Excellent	Outstanding

The five-point scale above indicates your possible evaluation of each of the following questions. Please select the letter which best describes each of the following:

44. The air quality in the metropolitan area around your base.

45. The water quality (rivers, lakes) in the metropolitan area around your base.

46. The scenic beauty of the metropolitan area around your base.

47. Amount of noise pollution in the metropolitan area around your base.

48. The recreational facilities (parks, trails, tennis courts, etc.) in the metropolitan area around your base.

49. The climate or weather of the metropolitan area around your base.

BLOCK III-A

A	B	C	D	E
Unimportant		Moderately Important		Very Important

The five-point scale above indicates various degrees of importance. From the scale, please select the letter which best represents the amount of importance you would place on each of the following when selecting a place to live or retire:

38. The amount of air pollution in the metropolitan area.

39. The amount of water pollution (rivers and lakes) in the metropolitan area.

40. The scenic beauty of the metropolitan area.

41. The amount of noise pollution in the metropolitan area.

42. The availability of recreational facilities (parks, trails, tennis courts, etc.).

43. The climate or general weather conditions in the metropolitan area.

BLOCK IV-A

A	B	C	D	E
Unimportant		Moderately Important		Very Important

The five-point scale above indicates various degrees of importance. From the scale, please select the letter which best represents the amount of importance you place on each of the following:

50. Local adult education programs (for high school credit).

51. Local adult education programs (college level programs).

52. The availability and quality of metropolitan area school districts.

53. Completing high school education.

54. Completing college education.

55. Completing graduate level education.

56. The availability and quality of metropolitan medical care.

57. The availability and quality of metropolitan area medical facilities (hospitals, clinics, etc.).

BLOCK IV-B

A	B	C	D	E
Substandard	Adequate	Good	Excellent	Outstanding

The five-point scale above indicates your possible evaluation of each of the following questions. Regardless of whetner you live on or off base, please select the letter which best describes each of the following:

58. Metropolitan area adult education programs (for high school credit).

59. Metropolitan area adult education programs (for college credit).

60. Metropolitan area school districts.

61. Metropolitan area colleges and universities.

62. Metropolitan area community medical care.

63. Metropolitan area community medical facilities (hospitals, clinics, etc.).

BLOCK V-A

A	B	C	D	E
Unimportant		Moderately Important		Very Important

The five-point scale above indicates various degrees of importance. From the scale, please select the letter which best represents the amount of importance you place on each of the following:

64. The availability of full-time jobs in the metropolitan area around your base.

65. The availability of part-time jobs in the metropolitan area around your base.

66. Metropolitan area public transportation.

67. Equal opportunity for all races.

68. Equal opportunity for all sexes.

69. Living in a community which has a low crime rate.

70. The availability and quality of banking facilities.

71. The availability and quality of retail facilities.

72. The availability and quality of service facilities.

73. The availability and quality of public libraries.

74. The availability of metropolitan area sporting events (professional, semi-professional, college).

75. The availability of metropolitan area cultural events (opera, theater, symphony, etc.).

BLOCK V-B

A	B	C	D	E
Substandard	Adequate	Good	Excellent	Outstanding

The five-point scale above indicates your possible evaluation of each of the following questions. Regardless of whether you live on or off base, please select the letter which best describes each of the following.

76. The availability of full-time jobs in the metropolitan area around your base.

77. The availability of part-time jobs in the metropolitan area around your base.

78. The availability of metropolitan area public transportation.

79. Equality among races in the metropolitan area around your base.

80. Sexual equality in the metropolitan area around your base.

81. The crime rate in the metropolitan area around your base.

82. The banks, retail, and service facilities in the metropolitan area around your base.

83. The public libraries.

84. The metropolitan area sporting events (professional, semi-professional, college).

85. The metropolitan area cultural events (opera, theater, symphony, etc.).

APPENDIX B

COMPUTER PROGRAMS

TABLE 18

PRIMARY DATA FILE REARRANGEMENT PROGRAM

```
100 PARAMETER N=139
105 CHARACTER DATA*62(N),TEMPDATA*62
110 DIMENSION LN(N),SURN(N)
115 CALL ATTACH(11,"79B79/PPP;",1,0,,)
120 CALL ATTACH(12,"79B79/PPP1;",3,0,,)
125 DO 10 I=1,N
130 READ(11,1000) LN(I),SURN(I),DATA(I)
135 10 CONTINUE
140 DO 20 I=1,N-1
145 DO 30 J=I+1,N
150 IF(SURN(I).LT.SURN(J)) GO TO 30
155 TEMPSURN=SURN(I)
160 SURN(I)=SURN(J)
165 SURN(J)=TEMPSURN
170 TEMPDATA=DATA(I)
175 DATA(I)=DATA(J)
180 DATA(J)=TEMPDATA
185 30 CONTINUE
190 20 CONTINUE
195 DO 40 I=1,N
200 WRITE(12,1000) LN(I),SURN(I),DATA(I)
205 40 CONTINUE
210 STOP
215 1000 FORMAT(I3,1X,I6,A62)
220 END
```

TABLE 19

SECONDARY DATA FILE REARRANGEMENT PROGRAM

```
100 PARAMETER N=139
105 CHARACTER DATA*62(N),TEMPDATA*62
110 DIMENSION LN(N),SURN(N)
115 CALL ATTACH(11,"79B79/QQQ;",1,0,,)
120 CALL ATTACH(12,"79B79/QQQ1;",3.0,,)
125 DO 10 I=1,N
130 READ(11,1000) LN(I),SURN(I),DATA(I)
135 10 CONTINUE
140 DO 20 I=1,N-1
145 DD 30 J=I+1,N
150 IF(SURN(I).LT.SURN(J)) GO TO 30
155 TEMPSURN=SURN(I)
160 SURN(I)=SURN(J)
165 SURN(J)=TEMPSURN
170 TEMPDATA=DATA(I)
175 DATA(I)=DATA(J)
180 DATA(J)=TEMPDATA
185 30 CONTINOE
190 20 CONTINOE
195 DO 40 I=1,N
200 WRITE(12,1000) LN(I),SURN(I),DATA(I)
205 40 CDNTINOE
210 STOP
215 1D00 FORMAT(I3,1X,I6,A23)
220 END
```

TABLE 20

TERTIARY DATA FILE REARRANGEMENT PROGRAM

```
100 PARAMETER N=278
105 CHARACTER DATA*62(N),TEMPDATA*62
110 DIMENSION LN(N),SURN(N)
115 CALL ATTACH(11,"79B79/REESPRES;",1,0,,)
120 CALL ATTACH(12,"79B79/DDD1;",3,0,,)
125 DO 10 I=1,N
130 READ(11,1000) LN(I),SURN(I),DATA(I)
135 10 CONTINUE
140 DO 20 I=1,N-1
145 DO 30 J=I+1,N
150 IF(LN(I).LT.LN(J)) GO TO 30
155 TEMPLN=LN(I)
160 LN(I)=LN(J)
165 LN(J)=TEMPLN
170 TEMPSURN=SURN(I)
175 SURN(I)=SURN(J)
180 SURN(J)=TEMPSURN
185 TEMPDATA=DATA(I)
190 DATA(I)=DATA(J)
195 DATA(J)=TEMPDATA
200 30 CONTINUE
205 20 CONTINUE
210 DO 40 I=1,N
215 WRITE(12,1100) SURN(I),DATA(I)
220 40 CONTINUE
225 STOP
230 1000 FORMAT(I3,1X,I6,A62)
231 1100 FORMAT(I6,1X,A62)
235 END
```

TABLE 21

FREQUENCIES, CONDESCRIPTIVE AND CROSSTABS PROGRAM

```
101##S,R(SL) :,8,16;;,16
102$:IDENT:WP1186,AFIT/LSG CAPTS GEORGE AND LEWIS
103$:SELECT:SPSS/SPSS
104RUN NAME; QUALITY OF LIFE QUESTIONNAIRE FOR 5 BASES
105VARIABLE LIST;BASE,GRADE,TIMASSG,ONBASE,HIEDLVL,
106;CITLIMS,MARSTAT,DEPENDS,QUEST09 TO QUEST19,QUEST20
107;TO QUEST37,QUEST38 TO QUEST49,QUEST50 TO QUEST63,
108;QUEST64 TO QUEST85
109VAR LABELS;BASE,BASE/GRADE,CURRENT GRADE/TIMASSG,TIME
110;AT PRESENT ASSIGNMENT/ONBASE,LIVE ON OR OFF BASE/
111;HIEDLVL,HIGHEST LEVEL OF FORMAL EDUCATION COMPLETED/
112;CITLIMS,LIVE WITHIN CITY LIMITS/
113;MARSTAT,MARTIAL STATUS/
114;DEPENDS,NUMBER OF DEPENDENTS SUPPORTED/
115;QUEST09,INCOME LEVEL IMPORTANCE/
116;QUEST10,SAVINGS OR INVESTMENT ACCOUNT IMPORTANCE/
117;QUEST11,OWNING HOME IMPORTANCE/
118;QUEST12,OWNING CAR IMPORTANCE/
119;QUEST13,OWNING MORE THAN ONE CAR IMPORTANCE/
120;QUEST14,ECONOMIC HEALTH OF METRO AREA IMPORTANCE/
121VAR LABELS;QUEST15,INCOME EVAL/
122;QUEST16,SAVINGS OR INVESTMENT EVAL/
123;QUEST17,TRANSPORTATION EVAL/
124;QUEST18,METRO ECONOMIC HEALTH EVAL/
125;QUEST19,HOUSING EVAL/
126;QUEST20,NEWSPAPERS IMPORTANCE/
127;QUEST21,TELEVISION IMPORTANCE/
128;QUEST22,RADIO IMPORTANCE/
129;QUEST23,NAT POLITICS PARTICIPATION IMPORTANCE/
130;QUEST24,LOC POLITICS PARTICIPATION IMPORTANCE/
131;QUEST25,PERSONAL PARTICIPATION IN POLITICS IMPORTANCE/
132VAR LABELS;QUEST26,LOCAL POLICE PROTECTION IMPORTANCE/
133;QUEST27,LOCAL FIRE PROTECTION IMPORTANCE/
134;QUEST28,LOCAL WELFARE PROGRAM IMPORTANCE/
135;QUEST29,NEWSPAPERS EVAL/
136;QUEST30,TELEVISION EVAL/
137;QUEST31,RADIO EVAL/
138;QUEST32,NAT POLITICS PARTICIPATION EVAL/
139;QUEST33,LOC POLITICS PARTICIPATION EVAL/
```

Tabel 21--Continued

```
140;QUEST34,PERSONAL PARTICIPATION IN POLITICS EVAL/
141;QUEST35,METRO POLICE PROTECTION EVAL/
142;QUEST36,METRO FIRE PROTECTION EVAL/
143;QUEST37,METRO WELFARE PROGRAM EVAL/
144VAR LABELS;QUEST38,AIR POLLUTION QUANTITY IMPORTANCE/
145;QUEST39,WATER POLLUTION QUANTITY IMPORTANCE/
146;QUEST40,SCENCIC BEAUTY IMPORTANCE/
147;QUEST41,NOISE POLLUTION QUANTITY IMPORTANCE/
148;QUEST42,RECREATIONAL FACILITY IMPORTANCE/
149;QUEST43,CLIMATIC CONDITIONS IMPORTANCE/
150;QUEST44,AIR QUALITY EVAL/
151;QUEST45,WATER QUALITY EVAL/
152;QUEST46,SCENIC BEAUTY EVAL/
153;QUEST47,NOISE POLLUTION EVAL/
154;QUEST48,RECREATIONAL FACILITIES EVAL/
155;QUEST49,CLIMATE EVAL/
156VAR LABELS;QUEST50,ADULT HS PROGRAM IMPORTANCE/
157;QUEST51,ADULT COLLEGE PROGRAM IMPORTANCE/
158;QUEST52,AVAIL AND QUAL OF SCHOOL DIST IMPORTANCE/
159;QUEST53,HIGH SCHOOL COMPLETION IMPORTANCE/
160;QUEST54,COLLEGE COMPLETION IMPORTANCE/
161;QUEST55,GRAD EDUC COMPLETION IMPORTANCE/
162;QUEST56,AVAIL AND QUAL OF MED CARE IMPORTANCE/
163;QUEST57,AVAIL AND QUAL OF MED FAC IMPORTANCE/
164;QUEST58,ADULT HS PROGRAM EVAL/
165;QUEST59,ADULT COLLEGE PROGRAM EVAL/
166;QUEST60,SCHOOL DISTRICT EVAL/
167;QUEST61,AREA COLLEGES AND UNIVERSITIES EVAL/
168;QUEST62,COMMUNITY MED CARE EVAL/
169;QUEST63,COMMUNITY MED FAC EVAL/
170VAR LABELS;QUEST64,FT JOB AVAILABILITY IMPORTANCE/
171;QUEST65,PT JOB AVAILABLITY IMPORTANCE/
172;QUEST66,PUBLIC TRANSPORT IMPORTANCE/
173;QUEST67,RACIAL EO IMPORTANCE/
174;QUEST68,SEXUAL EO IMPORTANCE/
175;QUEST69,LOW CRIME RATE IMPORTANCE/
176;QUEST70,BANKING FACILITY AVAIL IMPORTANCE/
177;QUEST71,RETAIL FACILITY AVAIL IMPORTANCE/
178;QUEST72,SERVICE FACILITY AVAIL IMPORTANCE/
```

TABLE 21-Continued

```
179;QUEST73,PUBLIC LIBRARY AVAIL IMPORTANCE/
180;QUEST74,SPORTING EVENTS AVAIL IMPORTANCE/
181;QUEST75,CULTURAL EVENTS AVAIL IMPORTANCE/
182VAR LABELS;QUEST76,FT JOB AVAIL EVAL/
183;QUEST77,PT JOB AVAIL EVAL/
184;QUEST78,PUBLIC TRANS AVAIL EVAL/
185;QUEST79,RACIAL EQUALITY EVAL/
186;QUEST80,SEXUAL EQUALITY EVAL/
187;QUEST81,CRIME RATE EVAL/
188;QUEST82,BANK, RETAIL AND SERVICE FACILITY EVAL/
189;QUEST83,PUBLIC LIBRARY EVAL/
190;QUEST84,SPORTING EVENTS EVAL/
191;QUEST85,CULTURAL EVENTS EVAL/
192PRINT FORMATS;GRADE TO QUEST85(A)/
193RECODE;BASE('A'=1)('B'=2)('C'=3)('D'=4)('E'=5)(ELSE=99)
194RECODE;GRADE('A'=1)('B'=2)('C'=3)('D'=4)('E'=5)('F'=6)
195;('G'=7)('H'=8)('I'=9)('J'=10)('K'=11)('L'=12)('M'=13)
196;('N'=14)('O'=15)('P'=16)
197RECODE;TIMASSC('A'=1)('B'=2)('C'=3)('D'=4)('E'=5)('F'=6)
198;('G'=7)('H'=8)('I'=9)('J'=10)
199RECODE;ONBASE('A'=1)('B'=2)('C'=3)
200RECODE;HIEDLVL('A'=1)('B'=2)('C'=3)('D'=4)('E'=5)('F'=6)
201;('G'=7)('O'=8)('P'=9)
202RECODE;CITLIMS('A'=1)('B'=2)
203RECODE;MARSTAT('A'=1)('B'=2)('C'=3)('D'=4)('E'=5)('F'=6)
204RECODE;DEPENDS('A'=1)('B'=2)('C'=3)('D'=4)('E'=5)('F'=6)
205;('G'=7)('H'=8)('I'=9)
206RECODE;QUEST09 TO QUEST14,QUEST20 TO QUEST26,
207;QUEST38 TO QUEST43,QUEST50 TO QUEST57,
208;QUEST64 TO QUEST75('A'=1)('B'=2)('C'=3)('D'=4)('E'=5)(ELSE=99)
209RECODE;QUEST15 TO QUEST19,QUEST29 TO QUEST37,
210;QUEST44 TO QUEST49,QUEST58 TO QUEST63,QUEST76 TO QUEST85
211;('A'=1)('B'=2)('C'=3)('D'=4)('E'=5)(ELSE=99)
212MISSING VALUES;BASE TO QUEST85(99)
213ASSIGN MISSING;BASE TO QUEST85(99)
214VALUE LABELS;BASE(1)MTN HOME(2)KEESLER(3)CRIFFISS
215;(4)REESE(5)SCOTT/
216;GRADE(1)COL(2)LTCOL(3)MAJ(4)CAPT(5)1LT(6)2LT(7)CMSGT
217;(8)SMSGT(9)MSGT(10)TSGT(11)SSGT(12)SGT(13)SRA(14)A1C
```

TABLE 21--Continued

```
218;(15)ARN(16)AB/
219;TIMASSG(1)LT1(2)1 TO 3(3)3 TO 4(4)4 TO 5(5)5 TO 6
220;(6)6 TO 7(7)7 TO 8(8)8 TO 9(9)9 TO 10(10)OVER 10/
221VALUE LABELS;ONBASE(1)ON BASE(2)OWN(3)RENT OFFBASE/
222;HIEDLVL(1)GRAMMAR(2)HS NUNGRAD(3)HS GRAD(4)TRADE
223;(5)SOME COLL(6)COLLEGE(7)RN(8)MASTERS(9)DOCTORATE/
224;CITLIMS(1)YES(2)NO/
225;MARSTAT(1)MAR NONMIL(2)MAR MIL(3)SINGLE(4)DIVORCED
226;(5)SEPARATED(6)WIDOWED/
227;DEPENDS(1)NONE(2)ONE(3)TWO(4)THREE(5)FOUR(6)FIVE
228;(7)SIX(8)SEVEN(9)8 OR MORE/
229;QUEST09 TO QUEST14,QUEST20 TO QUEST28,QUEST30 TO
230;QUEST43,QUEST50 TO QUEST57,QUEST64 TO QUEST75
231;(1)UNIMPORTANT(2)FAIRLY UNIMPORTANT(3)MODERATELY
232;IMPORTANT(4)IMPORTANT(5)VERY IMPORTANT/
233;QUEST15 TO QUEST19,QUEST29 TO QUEST37,QUEST44 TO
234;QUEST49,QUEST58 TO QUEST63,QUEST76 TO QUEST85
235;(1)SUBSTANDARD(2)ADEQUATE(3)GOOD(4)EXCELLENT
236;(5)OUTSTANDING/
237INPUT MEDIUM;CARD
238N OF CASES;136
239INPUT FORMAT:FIXED(1X,62A1,/,1X,23A1)
240FREQUENCIES;GENERAL=ALL
241OPTIONS;3,6,8,9
242STATISTICS;ALL
243READ INPUT DATA
244$:SELECTA:AAA1
245FINISH
246$ENDJOB
```

TABLE 22

KENDALL COEFFICIENT OF CONCORDANCE PROGRAM

```
0010##S,R(PB) :,8,16;;,16
0020$:IDENT:WP1186,AFIT/LSG CAPTS GEORGE AND LEWIS
0030$:SELECT:SPSS/SPSS
0040RUN NAME;5 BASE KENDALL'S W TEST
0050VARIABLE LIST;VAR1 TO VAR5
0060INPUT FORMAT;FIXED (5F5.3)
0070N OF CASES;5
0080INPUT MEDIUM;CARD
0090NPAR TESTS;KENDALL=ALL
0110READ INPUT DATA
0120$:SELECTA:KENDAT
0130FINISH
0140$:ENDJOB
```

TABLE 23

K-SAMPLE MEDIAN TEST PROGRAM

```
100##S,R(YH) :,8,16;;,16
110$:IDENT:WP1186,AFIT/LSC CAPTS GEORGE AND LEWIS
120$:SELECT:SPSS/SPSS
130RUN NAME;5 BASE EXTENDED MEDIAN TEST
140VARIABLE LIST;QUEST01,QUEST15
150N OF CASES;75
160INPUT FORMAT;FREEFIELD
170INPUT MEDIUM;CARD
180NPAR TESTS;MEDIAN=QUEST01 BY QUEST15(1,5)
190READ INPUT DATA
200$:SELECTA:BASEINF1
210$:ENDJOB
```

TABLE 21--Continued

```
218;(15)AMN(16)AB/
219;TIMASSG(1)LT1(2)1 TO 3(3)3 TO 4(4)4 TO 5(5)5 TO 6
220;(6)6 TO 7(7)7 TO 8(8)8 TO 9(9)9 TO 10(10)OVER 10/
221VALUE LABELS;ONBASE(1)ON BASE(2)OWN(3)RENT OFFBASE/
222;HIEDLVL(1)GRAMMAR(2)HS NONGRAD(3)HS GRAD(4)TRADE
223;(5)SOME COLL(6)COLLEGE(7)RN(8)MASTERS(9)DOCTORATE/
224;CITLIMS(1)YES(2)NO/
225;MARSTAT(1)MAR NONMIL(2)MAR MIL(3)SINGLE(4)DIVORCED
226;(5)SEPARATED(6)WIDOWED/
227;DEPENDS(1)NONE(2)ONE(3)TWO(4)THREE(5)FOUR(6)FIVE
228;(7)SIX(8)SEVEN(9)8 OR MORE/
229;QUEST09 TO QUEST14,QUEST20 TO QUEST28,QUEST38 TO
230;QUEST43,QUEST50 TO QUEST57,QUEST64 TO QUEST75
231;(1)UNIMPORTANT(2)FAIRLY UNIMPORTANT(3)MODERATELY
232;IMPORTANT(4)IMPORTANT(5)VERY IMPORTANT/
233;QUEST15 TO QUEST19,QUEST29 TO QUEST37,QUEST44 TO
234;QUEST49,QUEST58 TO QUEST63,QUEST76 TO QUEST85
235;(1)SUBSTANDARD(2)ADEQUATE(3)GOOD(4)EXCELLENT
236;(5)OUTSTANDING/
237INPUT MEDIUM;CARD
238N OF CASES;136
239INPUT FORMAT;FIXED(1X,62A1,/,1X,23A1)
240FREQUENCIES;GENERAL=ALL
241OPTIONS;3,6,8,9
242STATISTICS;ALL
243READ INPUT DATA
244$:SELECTA:AAA1
245FINISH
246$ENDJOB
```

APPENDIX C

DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

TABLE 24

CHARACTERISTICS OF THE RESPONDENTS

Characteristics	Base									
	MTN Home		Keesler		Griffiss		Reese		Scott	
	No.	%	No.	%	No.	%	No.	%	No.	%
No. Respondents	136	21.2	112	17.4	128	19.9	139	21.7	127	19.8
Officers	15	11	21	18.8	26	20.3	42	30.2	51	40.2
Enlisted	121	89	91	81.2	102	79.7	97	69.8	76	59.8
Time on Station in Years										
0 to 1	22	16.2	29	25.9	24	18.8	27	19.4	26	20.5
1 to 3	54	39.7	39	34.8	47	36.7	58	41.7	46	36.2
3 to 4	19	14.0	21	18.8	29	22.7	32	23.0	29	22.8
4 to 5	7	5.1	5	4.5	6	4.7	7	5.0	11	8.7
5 to 6	3	2.2	7	6.3	4	3.1	4	2.9	2	1.6
6 to 7	4	2.9	1	.9	2	1.6	1	.7	2	1.6
7 to 8	14	10.3	10	8.9	2	1.6	9	6.5	9	7.1
8 to 9	5	3.7			2	1.6			1	.8
9 to 10					3	2.3				
Over 10	8	5.9			9	7.0	1	.7	1	.8
Housing										
On-Base	88	64.7	50	44.6	55	43.0	54	38.8	50	39.4
Own Off-Base	30	22.1	35	31.3	22	17.2	38	27.3	48	37.8
Rent Off-Base	18	13.2	27	24.1	51	39.8	46	33.9	29	22.8

Table 24--Continued

Characteristics	MTN Home		Base Keesler		Griffiss		Reese		Scott	
	No.	%	No.	%	No.	%	No.	%	No.	%
Education Level										
Grammar			1	.9	2	1.6				
HS non-grad	1	.7	1	.9			4	2.9	2	1.6
HS grad	61	44.9	32	28.6	31	24.2	35	25.2	29	22.8
Trade school	7	5.1	6	5.4	7	5.5	6	4.3	6	4.7
Some college	43	31.6	46	41.1	57	44.5	41	29.5	34	26.8
College	14	10.3	17	15.2	20	15.6	42	30.2	23	18.1
Reg. Nurse							1	.7		
Masters	8	5.9	7	6.3	9	7.0	9	6.5	30	23.6
Doctorate	2	1.5	2	1.8	2	1.6	1	.7	3	2.4
Housing Location										
Within City Limits	6	4.4	76	67.9	102	79.7	81	58.3	8	6.3
Outside City Limits	130	95.6	36	32.1	26	20.3	58	81.7	119	93.7

TABLE 24--Continued

Characteristics	Base: MTN Home No.	MTN Home %	Keesler No.	Keesler %	Griffiss No.	Griffiss %	Reese No.	Reese %	Scott No.	Scott %
Martial Status										
Mar-Non-mil	76	55.9	67	59.8	73	57.0	85	61.2	89	70.1
Mar Military	9	6.6	14	12.5	6	4.7	8	5.8	8	6.3
Single	36	28.7	22	19.6	41	32.0	34	24.5	18	14.2
Divorced	11	8.1	6	5.4	8	6.3	7	5.0	9	7.1
Separated			3	2.7			5	3.5	3	2.4
Widowed	1	.7								
Dependents										
None	46	33.8	33	29.5	48	37.5	46	33.1	23	18.1
1	19	14.0	17	15.2	13	10.2	18	12.9	15	11.8
2	24	17.6	17	15.2	24	18.8	21	15.1	20	15.7
3	33	24.3	29	25.9	27	21.1	34	24.5	30	23.6
4	10	7.4	9	8.0	10	7.8	13	9.4	24	18.9
5	2	1.5	6	5.4	5	3.9	4	2.9	11	18.7
6	1	.7	1	.9			3	2.2	3	2.4
7	1	.7			1	.8				
8 or more									1	.8

APPENDIX D

SMSAs WITH ASSOCIATED LOW RATED COMPONENTS

SMSA	Base	Component	Rating
Boise, Idaho	Mountain Home AFB	Economic	Adequate
		Political	Adequate
		Health & Education	Adequate
		Social	Adequate
Biloxi-Gulfport Louisiana	Keesler AFB	Economic	Adequate
		Political	Adequate
		Social	Adequate
Rome-Utica New York	Griffis AFB	Economic	Adequate
		Political	Adequate
		Environmental	Adequate
		Social	Adequate
Lubbock, Texas	Reese, AFB	Economic	Adequate
		Environmental	Adequate
St. Louis Missouri	Scott AFB	Economic	Adequate

APPENDIX E

QOL/BIQ ALIGNED QUESTIONS

QOL Question No.	Question	Subject Area	BIQ Question No.	Questions
67	Equal opportunity for all races	Equal opportunity and treatment (race)	25	Acceptance by other racial groups.
56	Availability and quality of medical care	Hospital/Clinic	68	Satisfaction with medical care (provided you)
			69	Satisfaction with medical care (provided your dependents)
71	The availability and quality of retail facilities	Commissary	93	Quantity of merchandise (adequate stock levels).
			94	Variety of merchandise (brand name, sizes, products you want)

QOL/BIQ ALIGNED QUESTIONS--Continued

QOL Question No.	Question	Subject Area	BIQ Question No.	Questions
		Main BX	115	Quality of merchandise (range of brand quality/prices meets your needs)
			116	Quantity of merchandise (adequate stock levels)
48	The recreational facilities (parks, trails, tennis courts, etc.) in the metropolitan area around your base	Special Services Supply (Recreation Equipment Rental)	170	Variety of equipment
			171	Condition of equipment
73	The availability and quality of public libraries	Library	186	Book/magazine selection

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